

中国虎耳草属新分类群

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NEW TAXA OF THE GENUS *SAXIFRAGA* FROM CHINA

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Abstract Fifteen new taxa of the genus *Saxifraga* (Saxifragaceae) are described from China. They are *Saxifraga erectisepala* J. T. Pan, *S. sublinearifolia* J. T. Pan, *S. rizhaoshanensis* J. T. Pan, *S. gedangensis* J. T. Pan, *S. sheqilaensis* J. T. Pan, *S. egregioides* J. T. Pan, *S. caveana* W. W. Smith var. *lanceolata* J. T. Pan, *S. subtsangchanensis* J. T. Pan, *S. brachypodoidea* J. T. Pan, *S. oreophila* Franch. var. *depaoshanensis* J. T. Pan, *S. subsediformis* J. T. Pan, *S. nangqenica* J. T. Pan, *S. medogensis* J. T. Pan, *S. paiquensis* J. T. Pan and *S. daochengensis* J. T. Pan.

Key words *Saxifraga*; new taxa

关键词 虎耳草属; 新分类群

直萼虎耳草 新种 图 1: 1—5

Saxifraga erectisepala J. T. Pan, sp. nov. — *S. diversifolia* auct. non. Wall. ex Ser.; J. T. Pan in C. Y. Wu, Fl. Xizang. 2: 477. f. 158: 11—15. 1985.

Species similis *S. diversifoliae* Wall. ex Ser., sed sepalis sub anthesi erectis, 3—7-nervibus, nervis apice haud confluentibus, petalis ecallosis vel obscure 2—3-callosis, foliis caulinis 1—3, etc. differt.

Herba perennis 15—29.5 cm alta. Caulis infra medium tantum ad axillas foliorum brunneo-crispo-pilosus, superne breviter brunneo-glanduloso-pilosus. Folia basalia longe petiolata, laminis cordatis usque ovato-cordatis, 2.8—4.8 cm longis, 1.7—3.8 cm latis, apice acutis vel obtusis, basi cordatis, glabris, petiolis 5.5—9.7 cm longis, margine tantum basin versus sparse brunneo-crispo-pilosis; folia caulina 1—3, suprema elliptica, c. 2.8 cm longa et 1.7 cm lata, basi cordata, sessilia et semiamplexicaulia, glabra, infima petiolata similia foliis basalibus. Cyma 6.5—17.3 cm longa, 3—15-flora; rami inflorescentiae 3.5—10.5 cm longi, longe nigro-brunneo-glanduloso-pilosi, 2—3-flori; pedicelli 0.5—2.7 cm longi, pilis brevibus nigrobrunneis glandulosis obsiti; bractae lanceolatae oblongae usque lineares, 1.4—1.8 cm longae, 2.5—

7.5 mm latae, ventre et margine nigro-brunneo-glanduloso-pilosae, dorso subglabrae; sepala sub anthesi erecta, ovata usque liguloso-ovata, 4.5—6.2 mm longa, 2.1—3.6 mm lata, ventre glabra, dorso et margine nigrobrunneo-glanduloso-pilosa, 3—7-nervia, nervis apice haud confluentibus; petala flava, obovata elliptica usque late ovata, 0.79—1.37 cm longa, 4—7.1 mm lata, apice obtuso-rotunda, basi ungue 0.5—1.1 mm longo instructa, 5—9-nervia, ecallosa vel obscure 2—3-callosa; stamina 3.5—6.5 mm longa, filamentis subulatis; ovarium subsuperum, ovoideum, 2.5—4.5 mm longum, stylis 2, 1—1.4 mm longis.

Xizang (西藏): Mêdog (墨脱), under Abies forest on the waterside, alt. 3650 m, 1982. 09. 07, B. S. Li et S. Z. Cheng (李渤生、程树志) 746; Cona (错拉), in alpine meadow on southern slope, alt. 4200m, 1975.09.12, Qinghai-Xizang Exp. (青藏队) 751982; Yadong (亚东), under forest on slope, alt. 3700 m, 1974.09.14, Qinghai-Xizang Exp. 742530(holotype, PE); Nyalam(聂拉木), on the margins of forests, alt. 3340, 1972. 08. 26, Xizang Chin. Med. Herb. Exp.(西藏中草药普查队) 1483.

此种与 *S. diversifolia* Wall. ex Ser. 相似,但其萼片在花期直立,3—7脉,脉于先端不汇合,花瓣无疵体或具2—3不明显之疵体,茎生叶1—3枚等,可资区别。

四川虎耳草 新种 图 1: 6—12

***Saxifraga sublinearifolia* J. T. Pan, sp. nov.**

Species *S. linearifoliae* Engl. et Irmsch. similis, sed laminis foliorum glabris, petalis non callosis differt; etiam reapse affinis *S. aristulatae* Hook. f. et Thoms. et *S. culcilosae* Mattf., sed a *S. aristulata* Hook. f. et Thoms. pedicellis saepe glabris, raro sparsissime glanduloso-pilosis, petalis trinerviis, a *S. culcilosa* Mattf. caule longiore folioso, sepalis sub anthesi patentibus, 3—4-nerviis, petalis apice obtusis, trinerviis, ab ambabus laminis foliorum basalium apice obtusis et glabris recedit.

Herba perennis, 1.7—4.2 cm alta. Caulis inferne et in axillis foliorum crispe brunneo-glanduloso-pilosus. Folia basalia petiolata, lamina suboblonga, 2—4 mm longa, 0.4—1 mm lata, apice obtusa et glabra, petiolo 2.5—4 mm longo, basi dilatato margineque pilis brunneis crispis longis glandulosis instructo; folia caulina inferiora petiolata, superiora subsessilia, laminis lineari-oblongatis usque lineari-oblongis, 3.2—3.6 mm longis, fere 0.6 mm latis, apice obtusis, tantum basi sparsim crispo-brunneo-glanduloso-pilosis, petiolis tantum 2.3 mm longis, margine pilis brunneis crispis longis glandulosis instructis. Flos solitarius; pedicellus vulgo glaber, raro sparse glanduloso-pilosus, 3.7—7 mm longus; bractea lineari-oblonga, c. 3 mm longa et 0.6 mm lata, infime sparsim crispo-brunneo-glanduloso-pilosa; sepala sub anthesi patentia, subovata, 1.5—1.8 mm longa, fere 1 mm lata, apice obtusa, glabra, nervis 3—4 haud confluentibus; petala aurantia (in sicco), subelliptica, 2.9—3.2 mm longa, 1.3—1.6 mm lata, apice paullo obtusa, basi in unguem 0.3—0.4 mm longum abrupte contracta, trinervia, basi juxta nervos laterales callis 2 instructa; stamina c. 3 mm longa, filamentis subulatis; ovarium subsuperum ovoideum, fere 1.5 mm longum, stylis fere 1 mm longis.

Sichuan (四川), C. S. Liu (刘振书) 961 (holotype, SZ).

此种与 *S. linearifolia* Engl. et Irmsch. 相似,但其叶片无毛,花瓣无疵体,可以区别;也与 *S. aristulata* Hook. f. et Thoms. 和 *S. culcilosa* Mattf. 确实近缘,但与 *S. aristulata* Hook. f. et Thoms. 之区别,在于其花梗通常无毛,罕有极少腺毛,花瓣3脉,与 *S. culcilosa* Mattf. 之不同,在于其茎较长,多叶,萼片在花期开展,3—4脉,花瓣先端

钝, 3 脉, 而与此两种之共同区别, 则在于其基生叶叶片先端钝而无毛。

日照山虎耳草 新种 图 1: 13—20

***Saxifraga rizhaoshanensis* J. T. Pan, sp. nov.**

Species valde affinis *S. trinerviae* Franch., sed laminis foliorum apice tantum uniaristato-pilois, cyma biflora, sepalis apice interdum plus minusve glanduloso-ciliatis, petalis trinervi-bus differt.

Herba perennis, caespitosa, 6.5—7.4 cm alta. Caules nigro-brunneo-glanduloso-pilosi, etiam inferne pilis longis crispulis glandulosis obsiti. Folia basalia petiolata, laminis anguste ellip-ticis usque oblongis c. 2 mm longis, 0.5—1.2 mm latis, apice acutis atque uniaristato-brunneo-pilosis (pilo fere 1 mm longo), ventre et margine pilosis, dorso glabris, petiolis 2—2.5 mm longis, margine longe brunneo-crispo-glanduloso-pilosis; folia caulina inferiora petiolata lineari-oblonga, c. 6 mm longa et 1 mm lata, apice aristato-pilosa, utrinque et margine hispida, su-periora sessilia, linearia, fere 6.6 mm longa et 1 mm lata, utrinque et margine nigro-brunneo-glanduloso-pilosa. Cyma biflora; pedicelli 10—17 mm longi, nigrobrunneo-glanduloso-pilosi; sepala sub anthesi erecta usque patentia, ovata usque late ovata, c. 2.5 mm longa, 1.6—2 mm lata, margine membranacea etiam plerumque glabra, apice praemorsa etiam interdum plus minusve nigro-brunneo-glanduloso-pilosa, ventre glabra, dorso nigro-brunneo-glanduloso-pilosa, trinervia, nervis apice non confluentibus; petala flava, suboblonga, fere 4.2 mm longa et 1.7 mm lata, apice acuta, basi in unguem c. 0.5 mm longum contracta, trinervia, basi juxta nervos laterales callis 2 instructa; stamina fere 2.4 mm longa, filamentis subulatis; ovarium subsuperum, ovoideum, c. 2 mm longum, stylis 2 fere 2 mm longis divergentibus.

Sichuan (四川): Xiangcheng (乡城), Rizhao Mt. (日照山), in clefts of lime-stone on mountain peak, alt. 4300m, 1981.08.12, Qinghai-Xizang Exp. (青藏队) 4680 (holotype, PE); Derong (得荣), in alpine meadow on mountain peak, alt. 4450m, Qinghai-Xizang Exp. 3496.

此种确与 *S. trinervia* Franch. 近缘, 但其叶片先端仅具 1 芒状毛, 聚伞花序具 2 花, 萼片先端有肘多少具腺睫毛, 花瓣 3 脉, 可资区别。

格当虎耳草 新种 图 1: 21—27

***Saxifraga gedangensis* J. T. Pan, sp. nov.**

Species maxime similis *S. diffusicallosae* C. Y. Wu, sed caule pro media et inferiore parte glabro, laminis foliorum basali et foliorum caulinarum inferiorum glabris, sepalis margine glanduloso-ciliatis recedit.

Herba perennis, 23—25 cm alta. Caulis simplex, pro media et inferiore parte glaber, su-perne pilis glandulosis obsitus. Folia basalia longe petiolata, laminis ovatis glabris, 3.6—4.4 cm longis, 2.1—2.6 cm latis, apice acutis vel obtusis, basi rotundatis, petiolis 3.5—5 cm longis, tantum ventre et margine pro ima parte glanduloso-pilosis; folia caulina fere 4, inferiora foliis basalibus similia petiolata, sursum gradatimque sessilia, lanceolata usque subovata, 1.3—2.9 cm longa, 0.7—1 cm lata, apice acuta, basi rotundata usque paullo cordata (suprema), media et inferiora glabra, superiora margine breviter nigro-brunneo-glanduloso-pilosa, suprema utrinque et margine plus minusve breviter glanduloso-pilosa. Cyma corymbosa, 6—3.7 cm longa, 9-flora; pedicelli nigro-brunneo-glanduloso-pilosi; sepala sub anthesi erecta, anguste ovata, 3.5—4.5 mm longa, 1.2—1.6 mm lata, apice acuta vel paullo obtusa, ventre glabra, dorso et margine glanduloso-pilosa, trinervia, nervis sub apice haud confluentibus; petala flava ob-



图 1 1—5. 直萼虎耳草 1. 基生叶; 2. 上部茎生叶; 3. 萼片背面; 4. 花瓣; 5. 花梗、雄蕊、雌蕊。6—12. 四川虎耳草 6. 全株; 7. 基生叶; 8. 下部茎生叶; 9. 上部茎生叶; 10. 萼片; 11. 花瓣; 12. 花梗、雄蕊、雌蕊。13—20. 日照山虎耳草 13. 全株; 14. 基生叶; 15. 茎下部叶; 16. 茎上部叶; 17. 萼片腹面; 18. 萼片背面; 19. 花瓣; 20. 花梗、雄蕊、雌蕊。21—27. 裕当虎耳草 21. 全株; 22. 下部茎生叶; 23. 最上部茎生叶; 24. 花序; 25. 萼片腹面; 26. 花瓣; 27. 花梗、雄蕊、雌蕊。(潘锦堂、刘进军绘)

Fig. 1 1—5. *Saxifraga erectosepala* 1. basal leaf; 2. upper cauline leaf; 3. sepal (back); 4. petal; 5. pedicel, stamen, pistil. 6—12. *Saxifraga sublinearifolia* 6. entire plant; 7. basal leaf; 8. lower cauline leaf; 9. upper cauline leaf; 10. sepal; 11. petal; 12. pedicel, stamen, pistil. 13—20. *Saxifraga rizhaoshanensis* 13. entire plant; 14. basal leaf; 15. lower cauline leaf; 16. upper cauline leaf; 17. sepal (ventral surface); 18. sepal (back); 19. petal; 20. pedicel, stamen, pistil. 21—27. *Saxifraga gedangensis* 21. entire plant; 22. lower cauline leaf; 23. the uppermost cauline leaf; 24. inflorescence; 25. sepal (ventral surface); 26. petal; 27. pedicel, stamen, pistil.

ovata, 7—7.3 mm longa, c. 3.5 mm lata, apice obtuso-rotundata, basi non unguiculata, fere 7-

nervia, ventre callis pluribus (8) diffusis instructa; stamina filamentis subulatis, fere 5.5 mm longis instructa; ovarium subsuperum, anguste ovoideum, c. 4.5 mm longum, stylis 2 fere 1 mm longis.

Xizang (西藏): Mêdog (墨脱), Gedang (格当), in meadows among *Abies* woodlots, alt. 3400 m, 1980.09.01, Qinghai-Xizang Exp. (青藏队) 14683 (holotype, PE).

此种与 *S. diffusicallosa* C. Y. Wu 极相似, 但其茎中下部无毛, 基生叶和下部茎生叶之叶片无毛, 萼片边缘具腺睫毛, 可以区别。

舍季拉虎耳草 新种 图 2: 1—8

***Saxifraga sheqilaensis* J. T. Pan, sp. nov.**

Species inter *S. glaucophyllum* Franch. et *S. subaequifoliatam* Irmsch. media, a priori sepalis apice glabris et interdum erosis, petalis maculatis, a posteriore laminis foliorum caulinarum inferiorum basi rotundatis etc. diagnoscutur.

Herba perennis, 29—45 cm alta. Caulis pro media et inferiore parte pilis brunneis crispulis obsitus etiam superne glanduloso-pilosus. Folia basalia longe petiolata, laminis subellipticis, 2.6—2.9 cm longis, 1.2—1.4 cm latis, apice obtusis vel acutis, basi rotundatis, ventre pro inferiore parte et margine pro media inferioreque parte glanduloso-pilosis, dorso glabris, petiolis 2.1—2.3 cm longis, ventre et margine longe brunneo-crispo-glanduloso-pilosis; folia caulina inferiora petiolata necnon foliis basalibus similia, sursum sensim sessilia, lanceolata usque anguste ovata 1.8—3.6 cm longa, 0.5—1 cm lata, media utrinque et margine plus minusve glanduloso-pilosa, superiora paullo amplexicaulia, ventre et margine breviter glanduloso-pilosa, dorso pro ima parte glanduloso-pilosa. Cyma 6—9 cm longa, 7—13-flora; rami inflorescentiae et pedicelli omnino breviter glanduloso-pilosi (glandulis nigro-brunneis); sepala sub anthesi reflexa, ovata, 3.2—4.1 mm longa, 1.5—1.9 mm lata, apice paullo obtusa et glabra etiam interdum erosa, margine (apice excluso) et dorso glanduloso-pilosa, trinervia, nervis apice haud confluentibus; petala flava, aurantio-maculata, elliptica usque obovato-elliptica, 6—6.2 mm longa, 3.5—4 mm lata, apice obtuso-rotundata, basi in unguem 0.5—0.7 mm longum angustata, 5-nervia, 6—7-callosa; stamina fere 5.3 mm longa, filamentis subulatis; ovarium subsuperum ellipsoideum, c. 4 mm longum, stylis 2 fere 1 mm longis.

Xizang (西藏): Nyingchi (林芝), Sheqila Mt. (舍季拉山), in meadow on the margins of forests, alt. 4100m, 1980.09.17, Plat. Exp. Dep. Ec., (生态室高原组) 15603 (holotype, PE)。

此种居于 *S. glaucophylla* Franch. 和 *S. subaequifoliata* Irmsch. 之间, 与前者之区别在于其萼片先端无毛且有时啮蚀状, 花瓣具斑点, 与后者之不同在于其下部茎生叶之叶片基部圆形等。

矮优越虎耳草 新种 图 2: 9—14

***Saxifraga egregioides* J. T. Pan, sp. nov.**

Species affinis *S. egregiae* Engl. et *S. omphalodifoliae* Hand.-Mazz., sed ab ambabus statura minore, caule tantum 8.5—13.5 cm alto, superne glabro, foliis caulinis utrinque glabris, flore solitario vel cyma biflora, sepalis dorso glabris, petalis subobovatis, 4-callosis differt.

Herba perennis, 8.5—13.5 cm alta. Caulis a medio deorsum ad basin glanduloso-pilosus, sed superne glabrus. Folia caulina omnino petiolata, laminis ovato-cordatis usque cordatis,

8.5—10 mm longis, 6—8.5 mm latis, apice obtusis, basi cordatis, utrinque glabris, margine sparsim glanduloso-pilosis, petiolis 1.2—7.5 mm longis, ventre et margine (inferioribus tantum margine pro ima parte) longe crispo-glanduloso-pilosis. Flos solitarius vel cyma biflora; pedicelli 9—17 mm longi, raro glanduloso-pilosi; sepala sub anthesi reflexa, ovata, c. 2.6 mm longa et 2 mm lata, apice obtusa, margine breviter glanduloso-ciliata, utrinque glabra, nervis 3 liberis; petala flava, subobovata, 5—5.3 mm longa, 3.5—3.8 mm lata, apice obtusorotundata, basi in unguem fere 0.8 mm longum sensim angustata, 4—6-nervia, basi juxta nervos laterales 4-callosa; stamina c. 4.5 mm longa, filamentis subulatis; ovarium superum, ovoideum, fere 3 mm longum, stylis 2 c. 1 mm longis.

Xizang (西藏): Mêdog (墨脱), under *Abies* forest, alt. 3400m, 1980.09.01, Qinghai-Xizang Exp. (青藏队) 14685 (holotype, PE); same country, Gedang (格当), in meadow among *Abies* woodlots, 1982.09.07, B. S. Li et S. Z. Cheng (李渤生、程树志) 747.

此种与 *S. egregia* Engl. 和 *S. omphalodifolia* Hand. -Mazz. 近缘, 但与后两种之不同在于其形体较小, 高仅 8.5—13.5cm, 茎上部无毛, 茎生叶两面无毛, 花单生或聚伞花序具 2 花, 萼片背面无毛, 花瓣近倒卵形, 具 4 痂体。

狭萼虎耳草 新变种 图 2: 15—18

Saxifraga caveana W. W. Smith var. ***lanceolata*** J. T. Pan, var. nov.

A var. *caveana* differt sepalis lanceolatis glabris trinervibus, petalis trinervibus.

Xizang (西藏): Mainling (米林), on slope, alt. 4500 m, 1983. 07.27, B. S. Li et S. Z. Cheng (李渤生、程树志) 6058 (holotype, PE).

此变种与原变种之区别在于其萼片披针形, 无毛, 具 3 脉, 花瓣具 3 脉。

藏东南虎耳草 新种 图 2: 19—25

Saxifraga subtsangchanensis J. T. Pan, sp. nov.

Species persimilis *S. tsangchanensi* Franch. et *S. chumbiensi* Engl. et Irmsch., sed a priore sepalis 5-nervibus, nervis apice in verruculam confluentibus, petalis haud callosis, a posteriore sepalis dorso et margine nigro-brunneo-glanduloso-pilosis, petalis 7—8-nervibus ab ambabus sepalis sub anthesi erectis petalis dorso pro ima parte sparse glanduloso-pilosis non haud unguiculatis recedit.

Herba perennis caespitosa, 4—4.5 cm alta. Caules simplices, a medio ad imum prope nodos brunneo-glanduloso-pilosi, superne nigro-glanduloso-pilosi. Folia basalia longe petiolata, laminis subovatis usque ellipticis, 5.5—6.5 mm longis, 2—3.5 mm latis, apice paullo obtusis, ventre et margine brunneo-pilosis, dorso glabris, petiolis 5.5—11 mm longis, basi paullo dilatatis, margine brunneo-glanduloso-pilosis; folia caulina media et inferiora petiolis 2—6 mm longis instructa, superiora sessilia, lineari-oblonga usque lanceolata, 7.5—10 mm longa, 1.2—3.5 mm lata, apice paullo obtusa, ventre et margine brunneo-pilosa, dorso glabra. Flos solitarius; pedicellus 5—11 mm longus, nigro-glanduloso-pilosus; sepala sub anthesi erecta, subovata usque subelliptica, 4.5—5 mm longa, c. 2 mm lata, apice obtusa, ventre glabra, dorso et margine brunneo-glanduloso-pilosa, nervis 5 apice in verruculam confluentibus instructa; petala flava, obovata, 7.5—8 mm longa, 3.8—4 mm lata, apice retusa, basi haud unguiculata, 7—8-nervia, dorso pro ima parte sparsim glanduloso-pilosa; stamina fere 4.5 mm longa, filamentis subulatis; ovarium subsuperum, subovoideum, c. 3 mm longum, stylis 2 fere 1 mm longis.



图2 1—8. 全季拉虎耳草 1. 植株一部分; 2. 基生叶; 3. 上部茎生叶; 4. 花; 5. 萼片腹面; 6. 萼片背面; 7. 花瓣; 8. 花梗、雄蕊、雌蕊。9—14. 矮优越虎耳草 9. 植株一部分; 10. 最上部茎生叶; 11. 花; 12. 萼片; 13. 花瓣; 14. 花梗、花丝、雌蕊。15—18. 狭萼虎耳草 15. 基生叶; 16. 萼片; 17. 花瓣; 18. 花梗、雄蕊、雌蕊。19—25. 藏东南虎耳草 19. 全株; 20. 基生叶; 21. 中下部茎生叶; 22. 上部茎生叶; 23. 萼片腹面; 24. 花瓣; 25. 花梗、雄蕊、雌蕊。(潘锦堂、刘进军绘)

Fig. 2 1—8. *Saxifraga sheqilaensis* 1. part of plant; 2. basal leaf; 3. upper cauline leaf; 4. flower; 5. sepal (ventral surface); 6. sepal (back); 7. petals; 8. pedicel, stamen, pistil. 9—14. *Saxifraga egergioides* 9. part of plant; 10. the uppermost cauline leaf; 11. flower; 12. sepal; 13. petal; 14. pedicel, filament, pistil. 15—18. *Saxifraga caveana* var. *lanceolata* 15. basal leaf; 16. sepal; 17. petal; 18. pedicel, stamen, pistil. 19—25. *Saxifraga subtsangchanensis* 19. entire plant; 20. basal leaf; 21. middle and lower cauline leaf; 22. upper cauline leaf; 23. sepal (ventral surface); 24. petal; 25. pedicel, stamen, pistil.

Xizang (西藏): Mêdog (墨脱), western flank of the Jainzhugla pass (金珠拉山口西侧), in alpine shrub meadow, alt. 4100—4300m, 1982.09.05, B. S. Li et S.

Z. Cheng (李渤生、程树志) 714; same county, Gedang (格当), in clefts of alpine rocks, alt. 4300m, 1982.10.08, B. S. Li et S. Z. Cheng 1182 (holotype, PE).

此种与 *S. tsangchanensis* Franch. 和 *S. Chumbiensis* Engl. et Irmsch. 极近似, 但与前者之不同在于其萼片具 5 脉, 脉于先端汇合成 1 疣点, 花瓣无疵体, 与后者之不同在于其萼片背面和边缘具黑褐色腺毛, 花瓣具 7—8 脉, 而与此两种之区别则在于其萼片于花期直立, 花瓣背面基部疏生腺毛且无爪。

光花梗虎耳草 新种 图 3: 1—9

Saxifraga brachypodoidea J. T. Pan, sp. nov.

Species valde proxima *S. brachypoda* D. Don, sed caulibus cum pedicello glabris, sepalis glabris 3—4-nerviis, nervis apice haud confluentibus usque ex parte confluentibus, petalis subspathulatis trinerviis removenda.

Herba perennis, 5—7.5 cm alta. Caules simplices, glabri, ad axillas foliorum gemmati. Folia caulina conferta, coriacea, rigida, media majora sed inferiora et superiora minora, anguste ovata lanceolata usque oblonga, 5—7 mm longa, 1.8—2 mm lata, apice aristis rigidis instructa, media et inferiora margine rigido-glanduloso-ciliata, superiora glabra. Flos solitarius; pedicellus glaber; sepala sub anthesi suberecta, carnosa, subovata usque subelliptica, 3.6—4 mm longa, 2—2.2 mm lata, apice acuta, glabra, 3—4-nervia, nervis apice non confluentibus usque ex parte confluentibus; petala flava, subspathulata, c. 5.2 mm longa, 1.6—1.8 mm lata, apice acuta, basi in unguem sensim angustata, trinervia, ecallosa; stamina fere 4.5 mm longa, filamentis subulatis; ovarium subsuperum ovoideum, 3.5 mm longum, stylis 2 c. 2.5 mm longis.

Xizang (西藏): Mêdog (墨脱), southern flank of the Jainzhugla (金珠拉南侧), on rocks in alpine meadow, alt. 4200—4300m, 1980.09.02, Plat. Exp. Dep. Ec. (生态室高原组) 14741B (holotype, PE).

此种与 *S. brachypoda* D. Don 极相似, 但其茎和花梗无毛, 萼片无毛, 3—4 脉, 脉于先端不汇合至部分汇合, 花瓣近匙形, 具 3 脉, 可以区别。

大炮山虎耳草 新变种

Saxifraga oreophila Franch. var. ***dapaoshanensis*** J. T. Pan, var. nov.

A var. *oreophila* recedit foliorum laminis utrinque glabris, tantum margine setoso-glanduloso-ciliatis, apice aristatis, planta humiliore, 4—6 cm alta.

Sichuan (四川): Kangding (康定), Dapao Mt. (大炮山), on slope, alt. 4760 m, 1934.08.24, C. S. Liu (刘振书) 1305 (holotype, PE).

此变种与原变种之区别在于其叶片两面无毛, 仅边缘具刚毛状腺毛, 先端具芒, 形体较矮, 高 4—6 cm。

理县虎耳草 新种 图 3: 10—16

Saxifraga subsediformis J. T. Pan, sp. nov.

Species habitu et indumento *S. sediformi* Engl. et Irmsch. vero similis, a qua differt foliis caulinis nullis, ramis inflorescentiae gracilioribus, nervis sepalorum apice non confluentibus; affinis *S. llonakhensi* W. W. Smith, sed foliis basalibus utrinque glanduloso-pilosis, sepalis sub anthesi reflexis, petalis bicallosis distinguenda.

Herba perennis 4.5—6.7 cm alta. Caulis pilis brunneo-flavis longis glandulosis obsitus.

Folia basalia rosulatum conferta, spatulata, 9.5 mm longa, 2.5—3.5 mm lata, apice obtusa, utrinque et margine glanduloso-pilosa; folia caulina nulla. Pleiochasium corymbiforme, 2.5—4.5 cm longum, 13—15-florum; pedicelli graciles, pilis glandulosis brunneo-flavis obsiti; bracteae lineares, 3.1—4.5 mm longae, 0.5—0.8 mm latae, longe glanduloso-pilosae; sepala sub anthesi reflexa, ovata usque elliptico-ovata, 1.9—2 mm longa, 1—1.1 mm lata, apice obtusa, ventre glabra, dorso et margine glanduloso-pilosa, 3—4-nervia, nervis apice non confluentibus; petala flava, necnon basi aurantio-punctulata, suboblonga, c. 4.9 mm longa et 1.9 mm lata, apice obtuso-acuta, basi in unguem fere 0.4 mm longum contracta, trinervia, basi juxta nervos laterales bicallosa; stamina c. 3.5 mm longa, filamentis subulatis; ovarium subsuperum, late subellipsoideum, fere 2.3 mm longum, stylis 2 c. 1 mm longis divergentibus.

Sichuan (四川): Lixian (理县), in clefts of rocks on grassy slope, 1952. 06. 12, Z. Ho (何铸) 12763 (holotype, SZ).

此种之外形和毛被确与 *S. sediformis* Engl. et Irmsch. 相似, 而区别则在于无茎生叶, 花序分枝较纤细, 萼片之脉于先端不汇合; 与 *S. llonakhensis* W. W. Smith 近缘, 但其基生叶两面被腺毛, 花瓣具 2 痂体, 可以区别。

囊谦虎耳草 新种 图 3: 17—21

Saxifraga nangqenica J. T. Pan, sp. nov. — *S. prattii* Engl. et Irmsch. var. *obtusa* auct. non Engl.: J. T. Pan in Acta Phytotax. Sin. 16(2): 15. 1978.

Species *S. prattii* Engl. et Irmsch. tangit, ob caulem floriferum pilis glandulosis brunneis crispis longis obsitum et ob florem solitarium et ob sepala erecta, dorso sparsim brunneo-pilosa, trinervia ab ea removenda.

Herba perennis, 3.5—5 cm alta, caudiculis ramosis. Caulis florifer pilis glandulosis brunneis crispis longis obsitus. Folia caulina media majora, inferiora et superiora minora, oblonga usque anguste subobovata, 5—7.8 mm longa, 1.8—2.5 mm lata, apice obtusa, inferiora glabra, media et superiora utrinque glabra, margine brunneo-pilosa. Flos solitarius; pedicellus 1.4—1.6 cm longus, pilis glandulosis brunneis crispis longis obsitus; sepala sub anthesi erecta, late subovata, c. 4 mm longa et 3 mm lata, apice obtuso-acuta, ventre et margine glabra, dorso sparse brunneo-pilosa, nervis 3 apice confluentibus instructa; petala flava, ovata, fere 6.5 mm longa et 4 mm lata, apice obtusa, basi eunguiculata, 7-nervia, ecallosa; stamina c. 5 mm longa, filamentis subulatis; ovarium subsuperum, late ovoideum, c. 3.4 mm longum, stylis fere 2 mm longis.

Qinghai (青海): Nangqên (囊谦), in clefts of rocks, alt. 5200m, 1965.07.21, Y. C. Yang (杨永昌) 1250 (holotype, NWBI).

此种接近 *S. prattii* Engl. et Irmsch., 因其花茎被褐色卷曲长腺毛, 花单生, 萼片直立, 背面疏生褐色柔毛, 3 脉, 可与之区别。

墨脱虎耳草 新种 图 3: 22—27

Saxifraga medogensis J. T. Pan, sp. nov.

Species vere affinis *S. atunsiensis* W. W. Smith, sed foliis caulinis margine sparsim glanduloso-ciliatis, sepalis dorso sparse breviter glanduloso-pilosis, petalis trinerviis, distincte 4—5-callosis differt.

Herba perennis, c. 4.5 cm alta. Caulis a medio deorsum glaber, superne pilis glandulosis nigro-brunneis brevibus obsitus. Folia conferta carnosae subensata, 2.8—3 mm longa, 0.8—1 mm

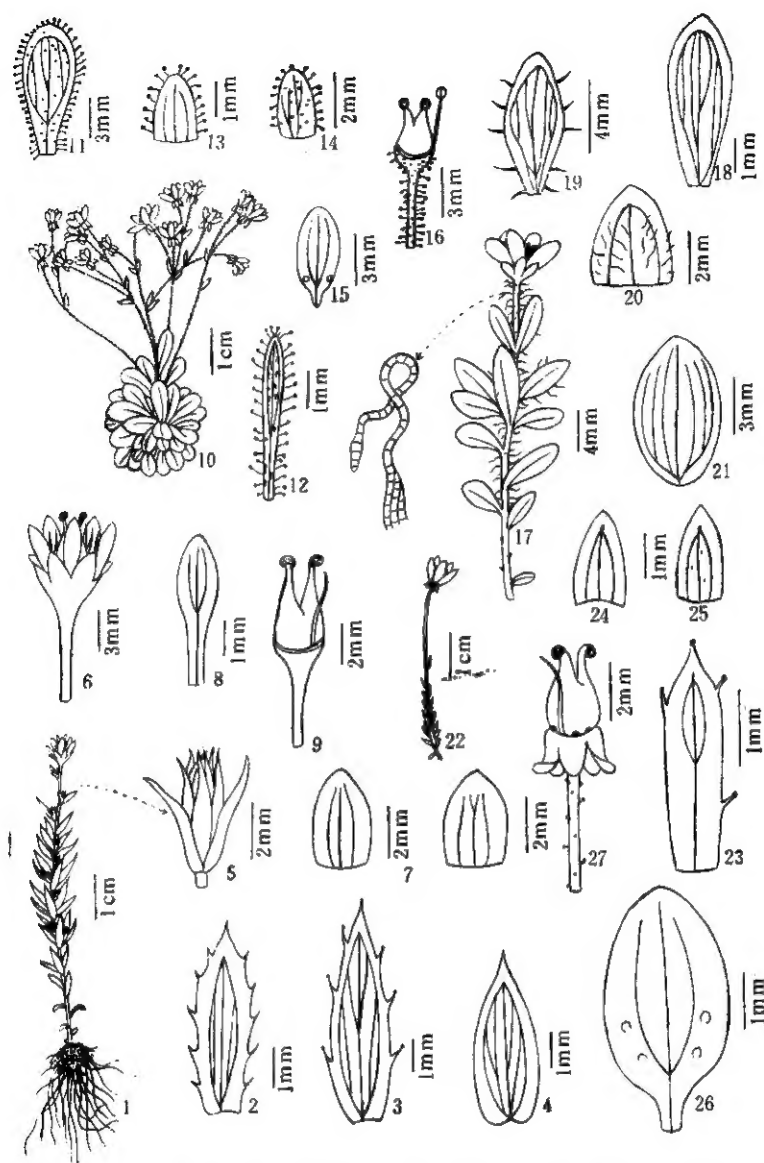


图3 1—9.光花梗虎耳草 1.全株; 2.茎下部叶; 3.茎中部叶; 4.茎上部叶; 5.腋芽; 6.花; 7.萼片; 8.花瓣; 9.花梗、花丝、雌蕊。10—16.理县虎耳草 10.植株; 11.基生叶; 12.苞片; 13.萼片腹面; 14.萼片背面; 15.花瓣; 16.花梗、雄蕊、雌蕊。17—21.囊谦虎耳草 17.花枝及花梗之腺毛; 18.茎下部叶; 19.茎中部叶; 20.萼片; 21.花瓣。22—27.墨脱虎耳草 22.植株一部分; 23.茎生叶; 24.萼片腹面; 25.萼片背面; 26.花瓣; 27.花梗、花丝、雌蕊。(潘锦堂、刘进军绘)

Fig. 3 1—9. *Saxifraga brachypodoidea* 1. entire plant; 2. lower cauline leaf; 3. middle cauline leaf; 4. upper cauline leaf; 5. axillary bud; 6. flower; 7. sepal; 8. petal; 9. pedicel, filament, pistil. 10—16. *Saxifraga subseidiformis* 10. plant; 11. basal leaf; 12. bract; 13. sepal (ventral surface); 14. sepal (back); 15. petal; 16. pedicel, stamen, pistil. 17—21. *Saxifraga nanggenica* 17. flower branch and glandular hair of pedicel; 18. lower cauline leaf; 19. middle cauline leaf; 20. sepal; 21. petal. 22—27. *Saxifraga medogensis* 22. part of plant; 23. cauline leaf; 24. sepal (ventral surface); 25. sepal (back); 26. petal; 27. pedicel, filament, pistil.

lata, apice acuta, utrinque glabra, margine sparsim glanduloso-ciliata. Flos solitarius; pedicel-

lus gracilis fere 2 cm longus, pilis glandulosis nigro-brunneis brevibus sparse obsitus; sepala sub anthesi reflexa, carnosae, ovata, c. 2 mm longa et 1 mm lata, apice acuta, ventre et margine glabra, dorso sparse breviter glanduloso-pilosa, nervis 3 apice in verruculam confluentibus instructa; petala flava, ovata usque anguste ovata, 4.2—4.4 mm longa, 2—2.6 mm lata, apice acuta, basi in unguem fere 1 mm longum contracta, trinervia, juxta nervos laterales distincte 4—5-callosa; stamina 3.4—3.9 mm longa, filamentis subulatis; ovarium superum, ovoideum, c. 2.6 mm longum, stylis fere 0.6 mm longis.

Xizang (西藏): Mêdog (墨脱), in shrub meadow, alt. 3700m, 1980.09.24, W. L. Chen (陈伟烈) 15106 (holotype, PE).

此种确与 *S. atunsiensis* W. W. Smith 近缘,但其茎生叶边缘疏生腺睫毛,萼片背面疏生短腺毛,花瓣具 3 脉,具明显之 4—5 痂体,可资区别。

派区虎耳草 新种 图 4: 1—7

***Saxifraga paiquensis* J. T. Pan, sp. nov.**

Species reapse affinis *S. finitima* W. W. Smith, sed statura minore, 1—1.5 cm alta, caule florifero supra rosulam foliorum foliis remotis non instructo, pedicello nullo, sepalis sub anthesi erectis, 8—9-nervibus, petalis epunctatis recedit.

Herba perennis dense caespitosa, 1—1.5 cm alta; caudiculis ramosissimis, pulvinatim conjunctis. Caulis florifer circa 9 mm longus, in rosula foliorum absconditus, flavo-glanduloso-pilosus. Folia carnosae, conferta, in rosulam imbricatim disposita, subelliptica usque suboblata, 3.5—4 mm longa, 1.5—2 mm lata, apice obtusa, utrinque et margine flavo-glanduloso-pilosa. Flos solitarius; pedicellus nullus; bractea hypanthio proxima; sepala sub anthesi erecta, carnosula, subovata, fere 3 mm longa et 2 mm lata, apice obtusa, utrinque margineque flavo-glanduloso-pilosa, nervis 8—9 apice confluentibus instructa; petala flava, obovata usque elliptica, 4.9—5 mm longa, 3—3.2 mm lata, apice obtusa, basi in unguem c. 0.4 mm longum contracta, 6—7-nervia, basi juxta nervos laterales bicallosa; stamina fere 3.5 mm longa, filamentis subulatis; ovarium subsuperum, ovoideum, c. 2.5 mm longum, stylis fere 1 mm longis.

Xizang (西藏): Mainling (米林), in clefts of rocks, alt. 4400—4800m, 1983.07.26, B. S. Li et S. Z. Chen (李渤生、程树志) 5848 (holotype, PE).

此种确与 *S. finitima* W. W. Smith 近缘,但其形体较小,高 1—1.5 cm,在莲座叶丛以上,花茎无疏离之叶,无花梗,萼片在花期直立,具 8—9 脉,花瓣无斑点,可资区别。

稻城虎耳草 新种 图 4: 8—13

***Saxifraga daochengensis* J. T. Pan, sp. nov.**

Species valde affinis *S. signatae* Engl. et Irmsch. et *S. dielsianae* Engl. et Irmsch., sed a priore foliis basalibus utrinque glanduloso-pilosis, foliis caulinis ellipticis usque obovatis, sepalis 9-nervibus, petalis ventre pro superiore parte flavis necnon inferiore parte purpurinis, dorso purpureis, epunctatis, 5-nervibus, a posteriore foliis omnino integris, sepalis sub anthesi patentibus, 9-nervibus, petalis late ovatis usque late ellipticis distinguitur.

Herba, 17—18 cm alta. Caulis supra medium ramosus, dense glanduloso-pilosus (glandulae nigro-purpureae). Folia basalia rosulatum conferta, coriacea, spatulata, 1.6—2.3 cm longa, 4.5—8 mm lata, apice acuta, utrinque et margine glanduloso-pilosa; folia caulina elliptica usque obovata, 1—2.6 cm longa, 5.5—12 mm lata, apice acuta, utrinque et margine glanduloso-pilosa. Pleiochasium 7.5—12.5 cm longum, 19—28-florum; rami inferiores inflorescenti-

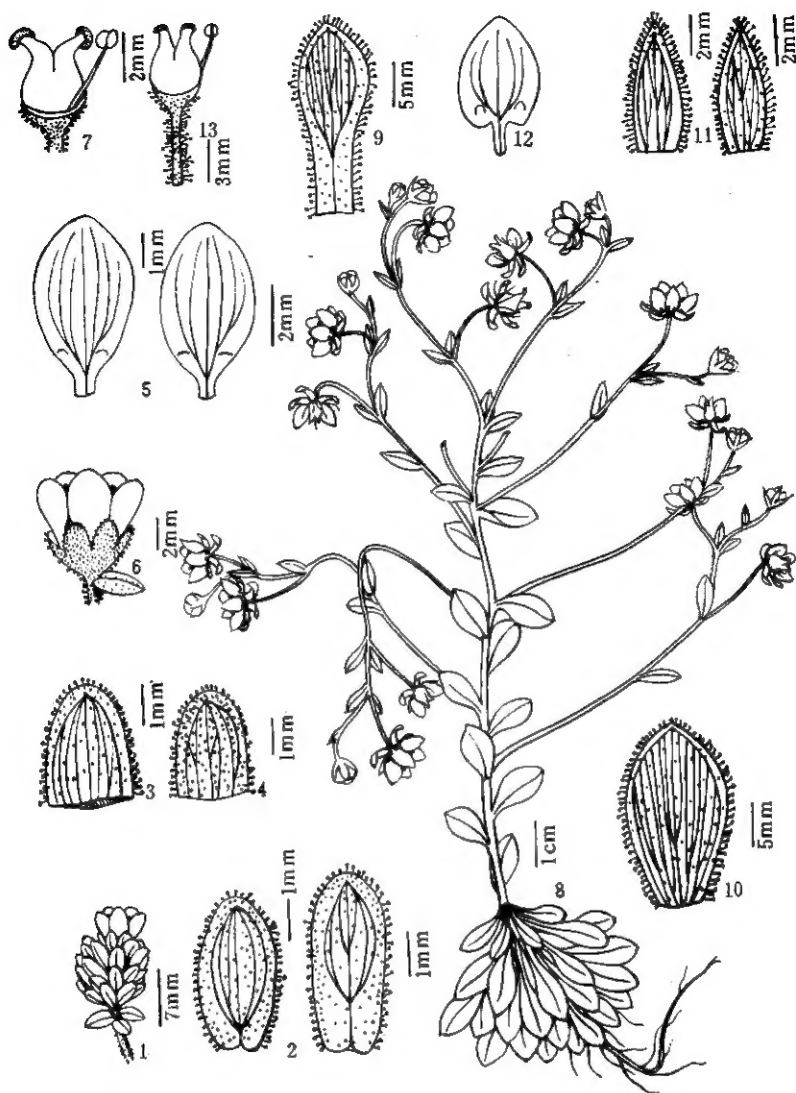


图4 1—7. 派区虎耳草 1.花枝; 2.叶; 3.萼片腹面; 4.萼片背面; 5.花瓣; 6.花; 7.花梗、雄蕊、雌蕊。8—13. 稻城虎耳草 8.全株; 9.基生叶; 10.茎生叶; 11.萼片; 12.花瓣; 13.花梗、雄蕊、雌蕊。(潘锦堂、王颖、刘进军绘)

Fig. 3 1—7. *Saxifraga paiquensis* 1. flower branch; 2. leaves 3. sepal (ventral surface); 4. sepal (back); 5. petals; 6. flower; 7. pedicel, stamen, pistil. 8—13. *Saxifraga daoche-ngensis* 8. entire plant; 9. basal leaf; 10. cauline leaf; 11. sepals; 12. petal; 13. pedicel, stamen, pistil.

ae 7—9 cm longi; pedicelli glanduloso-pilosi; sepala sub anthesi patentia, lanceolata, 5.5—6 mm longa, c. 2 mm lata, apice acuta, ventre pro summa parte et dorso et margine glanduloso-pilosa, 9-nervia, nervis apice in verruculam 1 confluentibus; patala ventre pro superiore parte flava necnon inferiore parte purpurina, dorso purpurea, late ovata usque late elliptica, fere 5 mm longa, 3.9—4 mm lata, apice acuta, basi cordata, ungue 1.2—1.5 mm longo instructa, 5-nervia, basi juxta nervos laterales bicallosa; stamina c. 4.5 mm longa, filamentis subulatis; ovarium superum, ovoideum, fere 4 mm longum, stylis c. 1.1 mm longis.

Sichuan (四川): Daocheng (稻城), in clefts of rocks under Picea forest on slope, alt. 3600m, 1981.08.26, Qinghai-Xizang Exp. (青藏队) 4353 (holotype, PE).

此种与 *S. signata* Engl. et Irmsch. 和 *S. dielsiana* Engl. et Irmsch. 极近缘, 但与前者不同在于其基生叶两面被腺毛, 茎生叶椭圆形至倒卵形, 萼片具 9 脉, 花瓣腹面上部黄色而下部稍紫色, 背面紫色, 无斑点, 具 5 脉, 与后者之区别则在于其叶全部全缘, 萼片在花期开展, 具 9 脉, 花瓣阔卵形至阔椭圆形。